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ABSTRACT

A good playground stimulates a child by offering a variety of interesting, challenging, and rewarding activities. Children learn from play and what they learn can be controlled by careful design of playgrounds. Topics discussed include theories of equipment; design; playground planning and concern for the needs of children, parents, and community; financial considerations; and equipment suggestions. Examples of innovative playgrounds and playgrounds for the handicapped are cited. (MLF)

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Playground Facilities and Equipment

school leadership digest

David Coursen

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FOREWORD

With the *School Leadership Digest* series, the National Association of Elementary School Principals adds another project to its continuing program of publications designed to offer school leaders essential information on a wide range of critical concerns in education.

The *School Leadership Digest* is a series of monthly reports on top priority issues in education. At a time when decisions in education must be made on the basis of increasingly complex information, the *Digest* provides school administrators with concise, readable analyses of the most important trends in schools today, as well as points up the practical implications of major research findings.

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The author of this report, David Coursen, is employed by the Clearinghouse as a research analyst and writer.

Paul L. Houts
Director of Publications
NAESP

Stuart C. Smith
Assistant Director and Editor
ERIC/CEM

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INTRODUCTION

> Several years ago, two 350-pound gorillas were turned loose on a new set of swings in Central Park. When it was found that the animals did not destroy the equipment, the playground was pronounced fit for New York City's children.
>
> Dattner, quoting from the *New York Times**

This statement illustrates the traditional way of judging the quality of playground equipment. It also strongly suggests a certain view of what play is. Play, for children as for gorillas, is a way to "let off steam" by releasing surplus energy. It provides a socially acceptable outlet for the child's hostile or aggressive impulses.

In this view, there is an obvious need for playgrounds, but not for careful equipment design. Since play is natural and even inevitable, the mere existence of an area for it is sufficient. Since children at play resemble gorillas, the best equipment is the most durable and the least expensive. The real time, expertise, and money in the school planning process should be devoted to the classroom, where all "learning" takes place.

Thinking about play and playgrounds in this way has a certain appeal to "common sense." The view is, to be sure, widely held, to the extent that gorillas would feel at home on most existing playgrounds. But nearly all modern theorists and designers reject this approach.

The modern approach to play is to consider it as a part, perhaps the decisive part, of the entire learning process. Hawkins' definition seems fairly representative:

> Play is expressive behavior—spontaneous, creative, fanciful. Play is a fun process, a learning process. It is a means for helping children handle social interactions; act out role models; think and behave creatively; develop motor skills and

*Unless otherwise stated, references to Dattner are from *Design for Play*.

coordination; discover the excitement of adventure and challenge. Play is unique to each child; he makes his own discoveries, at his own pace, at his own choosing. Play is an essential element in growing up as a healthy, productive and socially-aware person.

The basic idea that play is learning, not merely an outlet for ape-like behavior, is almost universally accepted among contemporary experts.

There are a number of theories about how play contributes to learning. Both Ellis and Andrews analyze the function of play in terms of movement theory. This approach stresses the need for a child to master certain basic "core" body movements, which are the components of more complex physical activities. Movement theory is, quite literally, a theory of "physical education."

Ellis defines play more broadly as information-gathering, knowledge-seeking behavior. Play should help the child to do two things: learn how to make novel or creative responses to situations and achieve certain specific learning goals.

Miller emphasizes play's developmental function. Through play the child should develop motor and mental skills. In addition, participating in cooperative play and following rules develop the child's social skills. Finally, play can also help the child achieve emotional maturity.

It is important to recognize, as Dattner points out, that play is a voluntary activity. Play is also spontaneous; a child will play wherever the prospects seem most attractive. A playground must compete with the other attractions of the world for the child's attention.

What all this suggests is that children learn from play and that what they learn can be controlled by careful design of playgrounds and equipment. A corollary is that, if the learning is not successfully planned, other, perhaps less desirable, types of learning will take place instead. It is clear that play is both physical and environmental education. In any play activity, the child learns about himself and the world in which he lives.

THEORIES OF EQUIPMENT DESIGN

The term "playground equipment" almost inevitably brings to mind swings, slides, and various types of metal structures. Such equipment, of course, reflects the traditional concept of play as a necessary distraction from the classroom learning environment. The resulting playgrounds are admirably summarized by Dattner:

> The typical . . . playground . . . could not be a more hostile environment for children's play if it had been designed for the express purpose of preventing play. Characteristically, it is an unbroken expanse of concrete or asphalt pavement, punctuated by the forlorn presence of metal swings, a slide, and some see-saws. Not only does this design lack any possibility for real play; the most interesting activities are prohibited anyway by signs saying "NO" in huge letters, followed by a list of all the things children like to do.

Such playgrounds are "gorilla-tested" to ensure that they have the desired characteristic, a durability that approaches indestructibility. It is doubtful, though, that an environment designed with a concept of the child as a gorilla is likely to foster creative, stimulating, or even enjoyable play. Instead, the child will recognize a hostility to genuine play and an insensitivity to real human needs.

Sutton-Smith, employing a systematic and scientific approach to equipment evaluation, analyzes the needs of children and the ways in which various pieces of equipment provide for those needs. For him, activities generally considered as play have three functions—exploration, testing, and creative play. Apparently, for children five through nine, the need for testing is partially met by traditional equipment. This judgment is worthy of note because it is virtually the only favorable comment about traditional equipment to be found in the recent literature on the subject. Most writers share Hanson's view that traditional equipment is "a proliferation of iron bars cemented into a stark desert of asphalt."

Because traditional facilities are so unsatisfactory, one of the principal concerns of contemporary experts is to formulate alternative design criteria for equipment and playgrounds. The intelligent application of "modern" play theory to design problems should produce more satisfactory equipment. Unfortunately, "modern" does not always mean "intelligent."

One of the most distressing phenomena in modern playgrounds is the way in which "beautiful" equipment, artistically created with all the virtuosity of the highly skilled designer, sits unused. Certain types of modern equipment, more like pieces of sculpture than things for children to play with, are designed purely from an adult perspective. No matter how beautiful a piece of equipment may seem to adult eyes, if it does not provide satisfaction for the children, its design is a failure.

The potential seriousness of this problem is emphasized in a study by Bishop and others. Children were asked to compare two or more equipment designs and indicate which they preferred. The authors then compared these results with what adult professionals *thought* the children would prefer. Findings strongly show that "adult designers are insensitive to the play preferences of children." As a result, the study concludes:

> . . . the design traditions and artistic talents of the design profession may not be sufficient. The objective of playground design is to provide attractive and satisfying play opportunities that also enhance the child's "health, safety, and morals," contribute constructively to his growth and development, and are economical. Designers must add to their skills and techniques 1) an ability to measure the preferences of children, and 2) an ability to explain the preferences in terms of design variables.

A sampling of equipment theory suggests, as Derman points out, that much of the best design work that is being done is intuitive. What this means, in terms of Bishop's two criteria, is that satisfactory equipment is being designed, but the creators are not formulating specific theories about why the equipment is successful, theories that might be of help to other, perhaps less talented, designers.

The work of Dattner, for example, is brilliant, but his theoretical framework is not very precise. From the premise that intelligence and learning consist of a creative interaction between the individual and his environment, he concludes that there are two basic requirements for the design of play equipment, and that these are the source for all the others:

> The first is that the environment must provide the individual with an adequate range of experience. The second is that the environment must allow for some measure of control by the individual. (As the next chapter shows, these are precisely the conditions sought by children when they are left to their own devices.) The British psychiatrist Ronald Laing has called these two interrelated factors "experience" and "control of experience," and states that they are essential for any individual to live a healthy human life.

He then lists more specific requirements for the play environment, including providing for graduated challenge, choice in activities, exercise of fantasy, expressive play, and separation from adults.

Other work similarly suggests what the equipment should do without indicating what sort of equipment will do it. Ellis notes that equipment selection should be based on the assumptions that children play for stimulation, need increasingly complex activities, and learn about the environment and roles in social groups through play. In order to meet these criteria, a piece of equipment should do the following:

- manipulate the child in the most ways by eliciting a wide range of possible responses from the child
- allow the child to manipulate it the most, by having the widest variety of possible uses
- preempt the behavior of the child the least
- allow for cooperation among children
- teach the children the largest number of desirable learning goals

Lozar emphasizes the importance of the visual interaction between the elements of the playground, the perceiver, and the larger environment. This concern with the overall design of a playground is shared by several other writers, though

they do not express it in terms of visual continuity. Sharkey and others, for example, suggest that a playground should be organic and coherent, with a design mindful of the relationships among the various activities in each area.

In addition, Sharkey and his colleagues consider the presence of equipment that arouses the interest of the child as the best way for a playground to compete with other attractions for a child's attention. They also urge that equipment should be manipulatable, arguing that children inevitably attempt to manipulate material and that manipulation of completely rigid equipment is a natural impulse that is generally termed "vandalism."

It is important also to consider how any specific piece of equipment will aid the child's development. Additionally, a playground should be a place to experience with all the senses, so it is important that it include natural areas with trees and other forms of plant life. Lueck is not unique in raising these points.

Miller's study includes guidelines for the design of adaptable, versatile, and flexible equipment. Such equipment should be:

- simple, natural, inexpensive
- unlimiting and interpretable
- movable and adaptable
- designed to encourage large and small muscle action
- designed to contribute to perceptual-motor development
- attractive

Friedberg defines a playground as the grouping of abstract activities normally experienced in nature, such as sliding, swinging, and balancing. A playground should be complex without being chaotic, should be designed to be of continuing interest to the child, and should provide opportunities for discovery and choice.

It is clear that many of these requirements overlap. In addition, many of the arguments attributed to one writer are by no means unique to that person. It is also clear that none

of these analyses provides any specific indication of how to go about fulfilling the design criteria established.

These writers all seem to agree that a good playground is one that stimulates the child by offering a variety of interesting, challenging, and rewarding activities. Learning takes place on a playground; the nature of that learning is closely related to the care with which the area is designed. A successful play area can teach a child many things if it offers a wide range of ways the child may creatively interact with it.

It is crucial to remember that learning takes place on any playground and that this learning may not always be positive or desirable. As Dattner observes, children learn a great deal on gorilla playgrounds:

> They learn, first, that they do not matter as individuals but only as a group whose needs for play facilities must be met even though in the most minimal way. They learn that they can have no constructive effect on their fixed and immobile environment; they can change it only in a destructive way, finding satisfaction by outwitting the adult world so evidently hostile to them. They learn that the man-made world is dull, ugly, and dangerous, and empty of sensuous satisfactions; that civilization delights in reducing the varied potentials and unique qualities of individuals to a pattern of uniformity; that pleasure can be obtained only at the expense of another individual—a solitary pleasure, incapable of being shared with others.

PLANNING THE PLAYGROUND

The success of a playground often depends on the care and skill with which it is planned. Proper planning should be concerned with all aspects of the play environment—the layout of the playground as well as the suitability of the equipment.

Concern for the Needs of Children, Parents, and Community

Ideally, the primary concern of the planner should be the needs of the children who will use the area, but it is often necessary to be concerned with the wishes of other groups as well.

Dattner evaluates the groups that influence playground design and the interest each group has in the success of the completed play area. He concludes that the group with the most control over design—administrators—is also the group least involved in actual playground use. Moreover, children, who have the most direct stake in the completed playground, have least control over its design and construction.

Administrators have three primary concerns in playground design: cost, maintenance, and the educational function of the playground. It is easy to see that the third concern should lead to the construction of child-oriented playgrounds, while the first two may foster gorilla playgrounds.

Clearly, the needs of the children who actually use the playground ought to have a major influence on its design. Dattner's list of a child's needs is worth repeating. The primary criteria are graduated challenge, which means that any child will have mastered some of the skills the playground demands but not others, and choice, which can mean, for example, that a slide will be designed so that the child is not forced to use it as soon as he has taken the first step up the ladder.

A playground should also include areas where the child can

exercise fantasy and places where there are possibilities for expressive play. A young child also needs some separation from adults. Ideally, this should mean that the parent is close enough to allow the child to feel secure, but not so close that the adult can interfere with the normal challenges and risks of real play.

Parents are concerned primarily with the accessibility of the play area and the safety of the equipment. In addition, parents of younger children will need to be able to observe the area comfortably and with some separation from their children.

The question of safety may be particularly troublesome and may seem to favor traditional equipment. However, even gorilla equipment can be dangerous. For example, a metal swing that strikes a bypasser in the head can be lethal. In addition, since there is an element of risk in all living, perfectly "safe" equipment is not necessarily desirable. If a child senses the challenge, even danger, in using a piece of equipment, the child will be more careful in his own actions. A bored child may not pay close attention to what he is doing: this is unsafe. A child who is stimulated by a specific activity will be fully conscious of all the variables in that activity: this can be equivalent to the element of risk that is a natural part of life.

Planning should also consider the needs of the people who live near the playground. They will surely be concerned with the amount of noise coming from the area (especially early in the morning), the appearance of the area, and, perhaps, the ease and convenience of watching children at play.

One way of making sure that these design needs are met and, more importantly, that the playground is accepted into the neighborhood is by making efforts to assure community involvement in the project. When this is done, the resources of the people in the area can be used effectively. In addition, people who feel involved in something are vitally interested in its success and may even help discourage vandalism.

Miller suggests the following planning guidelines for building a playground in a way that involves the whole community:

- identify the play-learning needs and interests of area children
- study and evaluate other play areas similar to the one you hope to build
- survey existing community resources
- involve the local power structure
- select a site
- draw up specific plans
- select priorities for implementing the plans

In addition, there should be some systematic method for evaluating the success of the project by measuring the changes the new playground has produced.

Financial Considerations

The usual method of calculating the cost of something is simply to ask how much money must be spent to build it. But, Dattner points out, construction cost is, in itself, a relatively meaningless concept. A piece of equipment that costs $500 and sits unused is very expensive. On the other hand, a piece costing $2,000 and in constant use may be a bargain. The best way to recognize this fact is to base estimates on cost per use rather than simply to calculate the sum of money needed to build the playground or the piece of equipment.

Similarly, it might seem that gorilla-proof equipment is the easiest and cheapest to maintain. Equipment that challenges and stimulates children often *is* expensive to maintain, but equipment that frustrates and angers them may encourage vandalism, and this, too, can be expersive. What Dattner suggests is that administrators judge equipment within the broad context of its overall function. It then becomes clear that a child-oriented play area may not be as expensive as it appears, while a gorilla playground may have many hidden costs.

Financing a play area is, of course, an important consideration. Resources can often be used most efficiently when the school board and the local department of parks and recreation work together. An area can be built for both school and general use, reserved for students during school hours and open

to the public at other times. If this is done, expenses can be shared and facilities can be used as fully as possible.

There is no real consensus about whether the most desirable equipment is "homemade" or purchased. Hohm argues that the advantages of equipment designed for a specific area make a customized playground superior. Manufacturers are often slow to develop equipment based on new ideas. In addition, a customized playground can "reflect the interaction between the unique characteristics of users and location."

Several writers describe the process of building a "homemade" playground cheaply and successfully. Seker describes a "scavenger playground" built by volunteers with discarded and donated material at a school in Vermilion, Ohio, for $200. Lueck relates a similar, equally successful experience.

Etkes emphasizes the disadvantages of "homemade" or customized equipment. "Homemade" may mean incompetently made. Professionally customized play areas can be incredibly expensive. Friedberg designed and built one small play area for $400,000. With carefully selected manufactured equipment, research costs are spread over a number of purchasers. In this way, a well-designed playground of purchased equipment can incorporate creative design ideas, providing, as Etkes says, "a coordinated environment with given types of equipment configurated in a way that accomplishes its purpose."

Some Equipment Suggestions

Because the term "equipment" so often means gorilla equipment, it is important to identify some types of innovative equipment that are available. Jensen suggests the scope of the change in equipment that will be necessary if child-oriented play areas are to be built.

> The swings, slides, teeter-totters and merry-go-rounds of yesterday will have to give way to the more useful and creative climbers, stegels, balance beams, vaulting devices, and the many improvised pieces that ingenious teachers are devising.

The simplest equipment list is offered by Dattner in a 1973 journal article, in which he suggests that 90 percent of play

needs could be met by a large sand pit placed next to a large water area. The comment is clearly an illustrative oversimplification, but it does suggest how simply many equipment criteria can be met.

Other lists are generally more comprehensive. Wuellner lists five basic equipment categories:

- moving apparatus
- realistic apparatus
- nonmoving apparatus
- inactive play apparatus
- facilities for nonactive play

Miller classifies equipment according to its desired function. It can be used for dramatic play, climbing, jumping, swinging and balancing, coordination testing, throwing, running, constructing, drawing, painting and sculpturing, and "other purposes."

Ledermann and Trachsel suggest that a comprehensive play area might include the following sections:

- outdoor work and construction area
- open air theater
- hard surface area
- playing field
- playground for small children

It is, of course, important to consider the physical characteristics of the children who will be using the equipment. Dattner analyzes the different developmental levels in the child's physical maturation, which seems to suggest that these might be useful ways of categorizing play facilities. Ledermann and Trachsel suggest that different areas be planned for infants, children of all ages, and the entire community. Mittelstaedt divides a hypothetical school playground into areas for preschool, kindergarten, primary, and intermediate children.

Older children, capable of more complex activities, will require more different types of equipment than younger children. Mittelstaedt suggests that preschool children need a

sandbox for digging and a climbing area. Kindergarten children need these facilities and, in addition, a slide, a paved area, and a turf area. Primary children require similar facilities but with the possibility of more different types of activities. Intermediate children need still greater diversity, including parallel bars and chinning bars.

EXAMPLES OF INNOVATIVE PLAYGROUNDS

Some of the most significant advances in equipment design have been made in playgrounds funded by private foundations as pilot projects. Professional designers construct such playgrounds in the hope of providing models for the successful building of other, similar facilities. Perhaps the most interesting work of this kind has been done by Friedberg and by Dattner.

Friedberg, with large grants from a private foundation, designed two very innovative playgrounds in urban school areas. His basic aim was to design equipment that would not require extensive maintenance, could be built anywhere, and could be used without extensive supervision.

He describes the New York City project as follows:

> The schoolyard at P.S. 166 is of modest proportions. In this rather limited space (100' x 175'), there has been incorporated a kindergarten play area, an amphitheater, an underground comfort station, a variety of play facilities, including concrete modular units, spring pads, wood stepping blocks, outdoor blackboard, arch climbers, geodesic domes with swings attached and wood bridges. On the street, a small indentation provides a sitting area with benches and chess tables.

In addition, the amphitheater can be used as a spray pool on appropriate days. The walls were painted in primary colors and the kindergarten play area was scaled to the size of its users.

Friedberg's other pilot playground was at the Buchanan School in Washington, D.C. That area contains "stepping columns, bridges, tree houses, modular concrete units, a cable spiderweb, arch climbers with swings suspended from them, a mound with three slides and tunnels, and a cable slide from the summit of the mound to the sand area in the valley." Next to it is a depressed basketball court that can also be used for other activities. Since the court is depressed, there is no need for the traditional fenced enclosure.

Both these areas are small, but in each a wide variety of activities is possible and in each the child remains always conscious of being a part of the larger environment. For example, young children can learn by watching older children or each other. In addition, the visual accessibility of every part of the playground largely eliminates the need for supervision.

Friedberg's work in these two playgrounds was done under rather large grants. In addition, as Derman points out, the designs are derived intuitively, so their use for other designers is limited. Instead of attempting to formulate general design theories, Friedberg is interested in a way to make good equipment widely available.

> **What is needed is a universal design that can meet the needs of children and that has the flexibility for designers to use as a tool in achieving a total concept, a product that can be reasonably manufactured, shipped and assembled and modified as ideas and information about play change. It should be a facility so flexible that it can be modified when it becomes obsolete or when there are inherent design errors.**

In attempting to realize this goal, Friedberg has constructed four modular systems that can easily be erected and dismantled. The four include a system of stacked wood timbers, a system of tubular steel bars, a system of concrete modular bases, and a series of pipe and cable units.

Dattner's most interesting playground is apparently the one he designed in New York's Central Park. The basic concept is of a group of small, varied, and related elements surrounding a large central space. The child is offered a wide choice of activities, ranging from individual play to group activities, and from simple to more complex types of play.

Physical Play versus Creative Building

In organizing his playground, Dattner established two zones, one primarily for physical activities, the other for such activities as digging, building, painting, and playing with water. These two areas suggest the principal dichotomy in modern playground design theory. One area is designed for unsupervised play, with the emphasis on physical activities. In this

area, specific pieces of already-completed equipment are dominant. The other section, oriented more toward manual activities, is much different. There the main concern is to make the child's environment as manipulable as possible.

Basically, the choice is between physical play areas and creative building areas. Friedberg's playgrounds, which clearly fit the former category, strongly emphasize physical play. The environment is manipulable, but the principal interaction between the child and the environment is dependent on the imagination of the child rather than on the characteristics of the equipment itself. Such an area can be relatively maintenance free and, of course, little supervision is necessary.

Each area in Dattner's playground is primarily intended to serve one of the two purposes. The physical play area was designed for heavy use and does not require constant maintenance or supervision. The manual activities section is open only at certain times and always under supervision. Because the physical play area is always open, it is possible to restrict the supervised play area to certain hours of operation. In the small areas Friedberg used, this kind of flexibility was not possible. Dattner has created a more comprehensive play environment, but the restricted space Friedberg had to employ and the need for a completely unsupervised play area may be more representative of the circumstances of most playgrounds being designed.

Adventure Playgrounds

Dattner calls his play area an "adventure playground," though others would call it a playscape. The adventure playground seems to have originated with C. T. Sorenson in Denmark in 1943. He observed that children seemed to enjoy playing on discarded building sites or even playing with junk. Accordingly, he devised an area providing children with a site and building materials and allowing them to build whatever they wish. The play area was called an adventure or junk playground.

The idea, which proved highly successful, spread through many parts of Europe. Lady Allen of Hurtwood helped popularize the idea in the United Kingdom, where a number of the most successful adventure playgrounds have been opened. Its acceptance in the United States has been relatively slow, though there was one in Minneapolis as long ago as 1950. The idea still seems to be gaining momentum, and many writers consider it "the wave of the future."

A typical adventure playground might cover from one-half to two and one-half acres and provide a wide range of possible activities for the children. These might include building houses, dens, and climbing structures with waste materials, having bonfires, cooking in the open, digging holes, gardening, or just playing with earth, sand, water, and clay. The atmosphere in such a playground should be permissive and free for children whose lives are often limited and restricted by the lack of space and opportunity in the rest of their urban environment.

Such an area does have definite limitations. As Lady Allen observes,* no matter how well the area is designed, children will eventually return to the streets unless there is supervision. In addition, the structures the children build will not be as visually satisfying to adults as the work of professional carpenters, and children will get dirty.

It is probably prudent to make some efforts to conceal a junk playground from outside view or neighbors may decide it is an eyesore and a blight on the neighborhood. There is, however, little that can be done about the inevitable results of a child interacting with dirt, and dirty children may be incompatible with a school environment. Safety problems, however, seem nonexistent. Lady Allen reports that in 10 years of adventure playgrounds in the United Kingdom there has not been a single serious accident.

There have been several efforts to incorporate adventure playgrounds into school areas. Reid reports on such a project

*Unless otherwise stated, references to Lady Allen are from *Planning for Play*.

in Vancouver, B.C. There, "modified" adventure playgrounds, more restrictive and less challenging than true adventure playgrounds but still far different from traditional play areas, were built at several schools. Questionnaires were circulated to determine the reactions of various concerned groups to the project. Every group was enthusiastic, though school personnel were the least so. Parents were concerned about children getting dirty, but the most common suggestion was that additions be made to the playgrounds.

McGuire reports on a project undertaken by the Milpitas, California, city-school recreation department. There an adventure playground was designed as part of a larger play area. The structures the children built were hidden from the view of outsiders. The results of the project were extremely positive. Youngsters used the new facilities frequently, developing new skills and experimenting with the building materials. The city is now considering the possibility of two more such playgrounds and is even contemplating using this program to replace or supplement the traditional after-school playground program.

The evidence suggests, though it certainly does not prove, that adventure playgrounds may after all have a place in a school recreation program. It is evident from the enthusiastic response to the adventure playgrounds that have been built that the concept itself is sound. The challenge is to devise practical ways to apply this concept to specific school situations.

PLAYGROUNDS FOR THE HANDICAPPED

Playground equipment for special education has a dual importance. The equipment itself is worth considering. In addition, the behavioral changes that innovative equipment has induced in retarded children are a dramatic example of the role equipment design can have in the development of all children.

In a journal article, Lady Allen defines a handicapped child as "one with any continuing disability of body, mind, or personality which is likely to impede normal development." She further suggests that classifying children as handicapped may be a self-fulfilling prophecy, especially since it can lead to the segregation of handicapped children.

Lady Allen was involved in the building of an adventure playground for handicapped children in London. It was designed to provide a stimulating, challenging atmosphere for such children. The key planning concepts were graduated challenge, which allows each child some appropriate activities, and adequate supervision, which encourages the children to make the fullest possible use of the facilities. Observation suggests that the area has enhanced the development of the children.

The Orange County Board of Public Instruction (Orlando, Florida) reports on an interesting development in specialized play areas—the Magruder Environmental Therapy Complex. This is a federally funded program based on the idea that "it is possible to improve the handicapped child's learning ability by providing a fuller range of preschool perceptual experience."

> Learning depends on perception; if the flow of sensory experience is blocked or slowed because of an impaired motor system, then mental development cannot proceed at a normal rate. In school a disabled child may have difficulty in grasping abstractions basic to academic progress. Such difficulty is often assumed to be due to low I.Q. or even retardation. Actually,

these learning problems may be the result of a lack of perceptual experience due to physical deficiencies.

The project designed equipment that would allow the physically handicapped child to learn about his body. A set of desirable perceptual goals for all children was established. Equipment that would allow for the development of these perceptions in the children by inducing certain motor responses was then designed. The ultimate aim of the project was to provide the children "a breadth of experience as similar as possible to that of normal experience." While it is not yet clear whether the project has achieved its stated goal, the children have definitely broadened the range of their play and social activities.

These two play areas are important because they may represent specific breakthroughs in the field of special education. In addition, though, they demonstrate the way in which the play environment can influence the child's development. Traditional equipment, limiting as it is, may actually inhibit the child's development in much the same way that physical disabilities might. The existence of these two facilities and the increase in sensory awareness of the children using them confirm the hypothesis that play is learning and that what a child experiences in the play environment is "educational."

CONCLUSION

Contemporary thinking about playground equipment and design is certainly not monolithic. However, most of the differences among writers on the subject are about how to accomplish specific goals, not about the goals themselves. There seems to be a broad consensus that play is a learning experience.

This means that the traditional gorilla playground is no longer acceptable. A playground is ~~not~~ just a place to which the child goes for recreation that interrupts the learning process taking place in the classroom. In fact, some writers come close to arguing the reverse, namely that the most important part of the learning process is what takes place in the play environment.

Play is too important to the child's development for haphazard equipment design or casual playground planning to be tolerated any longer. Play areas should be carefully planned to meet the needs of the children who will be using them. Good equipment should stimulate the child and help him learn about himself and his environment. There should be pieces of equipment designed to induce specific types of learning, and others which simply offer the child a wide range of possible uses.

Clearly, there are many possibilities for developing new equipment and new design criteria. It is certain that children will be the beneficiaries of a new way of looking at playgrounds, one that consigns the bars and rigid metal forms of traditional playgrounds to a more appropriate setting, the zoo.

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